

WHAT IS CLAIMED IS:

1. An electro-optical device, comprising:

a substrate;

a plurality of pixel electrodes arranged in a matrix above the substrate;

thin-film transistors provided above the substrate to control switching of the pixel electrodes;

scan lines provided above the substrate to supply scan signals to put the thin-film transistors into an ON state or an OFF state to gates of the thin-film transistors;

data lines provided above the substrate to supply image signals to the pixel electrodes through sources and drains of the thin-film transistors when the thin-film transistors are put into the ON state; and

a scan-signal supply circuit that line-sequentially supplies the scan signals to the scan lines and holds the potential of the scan signals, in the middle of changing the potential of the scan signals from a high potential that puts the thin-film transistors into the ON state to a low potential that puts the thin-film transistors into the OFF state and in the middle of changing the potential of the scan signals from the low potential to the high potential, to an intermediate potential between the high potential and the low potential for a predetermined period.

2. The electro-optical device of claim 1, the scan-signal supply circuit supplying the scan signals so that, a period in which, of two scan signals supplied to the adjacent scan lines, one scan signal that precedes is changed from the intermediate potential to the low potential, and a period in which the other scan signal that follows is changed from the low potential to the intermediate potential overlap each other.

3. The electro-optical device of claim 1, intermediate potential being set to a potential that puts the thin-film transistors into an incomplete ON state.

4. The electro-optical device of claim 1, in the middle of changing the potential of the scan signals from the high potential to the low potential, the scan-signal supply circuit holding the potential of the scan signals to a plurality of potentials for respective predetermined periods, the plurality of potentials being different from each other and including the intermediate potential; and, in the middle of changing the potential of the scan lines from the low potential to the high potential, the scan-signal supply circuit holding the potential of the scan signals to a plurality of potentials for respective predetermined periods, the plurality of potentials being different from each other and including the intermediate potential.

5. The electro-optical device of claim 1, the scan-signal supply circuit including:
  - a shift-register circuit that sequentially outputs a transfer signal to the scan lines;
  - an output circuit that line-sequentially outputs the scan signals to the scan lines in response to input of the transfer signal; and
  - a power-supply changing circuit that changes an external power supply to define the high potential at output sides of the output circuit to two values.
6. The electro-optical device of claim 5, the output circuit including at least one of inverter circuits and buffer circuits which include complementary transistor circuits having high potential sides that are connected to the external power supply.
7. The electro-optical device of claim 5, the power-supply changing circuit including a switch that switches and outputs two power supplies.
8. The electro-optical device of claim 5, the power-supply changing circuit including a programmable digital-to-analog converter that switches and outputs two power supplies.
9. The electro-optical device of claim 5, the output circuit including a first section that sequentially outputs the scan signals to the odd-numbered-row scan lines of the plurality of scan lines and a second section that sequentially outputs the scan signals to the even-numbered-row scan lines of the plurality of scan lines, and
  - the power-supply changing circuit causing the first section and the second section to change the external power supply into two values, respectively.
10. The electro-optical device of claim 1, further comprising:
  - an opposing substrate, which opposes the substrate; and
  - an electro-optic material layer that is sandwiched between the substrate and the opposing substrate.
11. A drive device for an electro-optical device, the drive device comprising:
  - a substrate;
  - a plurality of pixel electrodes arranged in a matrix above the substrate;
  - thin-film transistors provided above the substrate to control switching of the pixel electrodes;
  - scan lines provided above the substrate to supply scan signals to put the thin-film transistors into an ON state or an OFF state to gates of the thin-film transistors;
  - data lines provided above the substrate to supply image signals to the pixel electrodes through sources and drains of the thin-film transistors when the thin-film transistors are put into the ON state; and

a scan-signal supply circuit that holds the potential of the scan signals, in the middle of changing the potential of the scan signals from a high potential that puts the thin-film transistors into the ON state to a low potential that puts the thin-film transistors into the OFF state and in the middle of changing the potential of the scan signals from the low potential to the high potential, to an intermediate potential between the high potential and the low potential for a predetermined period.

12. The drive device of claim 11, the scan-signal supply circuit including:

a shift-register circuit that sequentially outputs a transfer signal to the scan lines;

an output circuit that line-sequentially outputs the scan signals to the scan lines in response to input of the transfer signal; and

a power-supply changing circuit that changes an external power supply to define the high potential at output sides of the output circuit to two values.

13. The drive device of claim 11, further comprising an image-signal supply circuit that supplies the image signals to the data lines.

14. A drive method for an electro-optical device in which scan signals to put thin-film transistors into an ON state or an OFF state are supplied to the gates of the thin-film transistors, the method comprising:

holding the scan signals to an intermediate potential from a low potential for a predetermined period;

holding the scan signals to a high potential from the intermediate potential for a predetermined period;

holding the scan signals to the intermediate potential from the high potential for a predetermined period; and

changing the scan signals from the intermediate potential to the low potential.

15. The drive method of claim 14, further including setting the intermediate potential to a potential that puts the thin-film transistors into an incomplete ON state.

16. The drive method of claim 14, the electro-optical device including a plurality of scan lines that are line-sequentially driven, and settings of intermediate potentials of the scan signals for scan lines that are adjacent to each other are different from each other.

17. The drive method of claim 14, the electro-optical device including a plurality of scan lines that are line-sequentially driven, and settings of high potentials of the scan signals for scan lines that are adjacent to each other are different from each other.

18. An electronic apparatus, comprising:

an electro-optical apparatus that includes:

a substrate;

a plurality of pixel electrodes arranged in a matrix above the substrate;

thin-film transistors provided above the substrate to control switching

of the pixel electrodes;

scan lines provided above the substrate to supply scan signals to put the thin-film transistors into an ON state or an OFF state to gates of the thin-film transistors;

data lines provided above the substrate to supply image signals to the pixel electrodes through sources and drains of the thin-film transistors when the thin-film transistors are put into the ON state; and

a scan-signal supply circuit that line-sequentially supplies the scan signals to the scan lines and holds the potential of the scan signals, in the middle of changing the potential of the scan signals from a high potential that puts the thin-film transistors into the ON state to a low potential that puts the thin-film transistors into the OFF state and in the middle of changing the potential of the scan signals from the low potential to the high potential, to an intermediate potential between the high potential and the low potential for a predetermined period.